Docket No.: 1509-256 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	
Guillaume BELROSE et al	:	
Serial No. Not yet assigned	:	Group Art Unit: Not yet assigned
Filed: herewith	:	Examiner: N/A

For: AUDIO USER INTERFACE WITH AUDIO FIELD ORIENTATION INDICATION

PRELIMINARY AMENDMENT

Assistant Commissioner For Patents
Washington, D.C. 20231

Dear Sir:

Preliminary to examination of the above-referenced application, please amend the application:

IN THE CLAIMS:

Please amend claims 17 and 25 as follows:

17. (Amended) A user-interface method according to claim 12, wherein the changes in the said offset include user-commanded changes.

25. (Amended) Apparatus according to claim 21, wherein the offset means is operative to vary the said offset in response to user input via an input device of the apparatus.

REMARKS

The above-referenced application is amended to delete the multiple dependencies of claims 17 and 25.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "Marked-Up Version Showing Changes".

Respectfully submitted,

LOWE HAUPTMAN GILMAN & BERNER, LLP

Allan M. Lowe
Registration No. 19,641

Date: January 29, 2002
1700 Diagonal Road, Suite 310
Alexandria, Virginia 22314
(703) 684-1111

- straight-ahead facing direction in which case step (b) takes account, at least at a component level, of changes in said offset except that changes in offset resulting from rotation of the user's head relative to their body are matched out by the changes in the orientation of the indicator reference relative to the presentation reference;
- a direction fixed relative to the world, in which case step (b) takes account, at least at a component level, of both of changes in said offset, and changes in orientation of the indicator reference relative to the presentation reference resulting from rotation of the user's body relative to the world.

14. A user-interface method according to claim 1, wherein the sound sources are rendered through headphones and step (a) involves varying said offset in dependence on the rotation of the user's head relative to the world whereby to stabilise the audio field relative to the world; said predetermined indicator reference being one of:

- current facing direction, in which case step (b) takes account, at least at a component level, of changes in said offset, there being no change in the orientation of the indicator reference relative to the presentation reference;
- straight-ahead facing direction in which case step (b) takes account, at least at a component level, of changes in said offset except that components of offset changes resulting from rotation of the user's head relative to their body are matched out by the changes in the orientation of the indicator reference relative to the presentation reference;
- a direction fixed relative to the world, in which case step (b) takes account, at least at a component level, of changes in said offset except that changes in offset resulting from rotation of the user's head relative to the world are matched out by the changes in the orientation of the indicator reference relative to the presentation reference.

17. A user-interface method according to [~~any one of claims 12 to 14~~ claim 12], wherein the changes in the said offset include user-commanded changes.

this stabilisation taking account of whether the audio output devices used to synthesise the sound sources are world, vehicle, body or head mounted, and, as appropriate, rotation of the user's head or body, or turning of the vehicle.

25. Apparatus according to claim 21 ~~or claim 24~~, wherein the offset means is operative to vary the said offset in response to user input via an input device of the apparatus.

26. Apparatus according to claim 21, wherein the visual orientation indicator arrangement comprises a set of selectively energisable indicator elements, one of the orientation-determining means and the visual orientation indicator arrangement including means for energising a selected one of the elements in dependence on the determined orientation of the audio field reference relative to the indicator reference.

27. Apparatus according to claim 21, wherein the visual orientation indicator arrangement comprises a display screen, one of the orientation-determining means and the visual orientation indicator arrangement including means for causing the display on the screen of an indication of the determined orientation of the audio field reference relative to the indicator reference.

28. Apparatus according to claim 25, wherein the visual orientation indicator arrangement is incorporated in the input device.

29. Apparatus according to claim 28, wherein said input device is a trackball device, the visual orientation indicator arrangement comprising a display screen, and one of the orientation-determining means and the visual orientation indicator arrangement including means for energising a selected one of the elements in dependence on the determined orientation of the audio field reference relative to the indicator reference.

30. Apparatus according to claim 28, wherein said input device is a trackball device, the visual orientation indicator arrangement comprising a set of selectively energisable indicator elements, and one of the orientation-determining means and the visual orientation